



Forum for American Leadership

Successful Semiconductor Industry Export Controls: The Importance of a Multilateral Effort

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The Top Line: Prompted by U.S. leadership, the democratic world is **implementing export controls on sophisticated semiconductor technologies and manufacturing equipment**, with the goal of protecting allied access—and limiting adversary access—to this critical supply chain.

The Forum for American Leadership’s [Technology and National Security Innovation](#) Working Group outlines why a successful, multilateral export control regime requires an **aligned, global approach** across many stakeholders, as well as a nuanced understanding of the Chinese government’s likely response (and a willingness to withstand that response).

THE STATE-OF-PLAY

- The United States imposed [sweeping semiconductor export controls](#), including access to core technology, tooling, and personnel, on October 7, 2022, and has since been working with allied nations and institutions to get them to follow suit.
- The key nations involved in semiconductor export controls are the United States, Japan, South Korea, Taiwan, and India. The key multilateral stakeholders are the European Union, the Quadrilateral Security Dialogue (also known as the Quad), and the G7.
- Beijing practices a policy of economic coercion, predatory economics, and the creation of state-backed “national champions,” with the full financial backing of the state. This intrusion into the semiconductor industry distorts the marketplace, making the Chinese Communist Party (CCP) the [biggest threat](#) to the semiconductor supply chain.

AMERICA’S ROLE: INNOVATION, DESIGN, MANUFACTURING, AND INDUSTRY LEADERSHIP

- Multiple presidential administrations across political parties have recognized that **protecting U.S. and allied leadership of the semiconductor industry is a key national security priority**.
 - SMIC—China’s largest chip maker—was [added](#) to the U.S. Commerce Department’s trade blacklist (i.e., the Entity List) in 2020 by the Trump Administration. The [Entity List](#) restricts the export of certain sensitive technologies and components to organizations who are involved in activities that threaten U.S. national security interests. The Biden Administration [added](#) YMTC in 2022.

- On October 7, 2022, Commerce’s Bureau of Industry and Security [issued](#) sweeping new regulations for controlling exports of advanced semiconductors and the means and technology needed to produce them, including those used in artificial intelligence and supercomputing applications. Specifically, certain semiconductor equipment, tooling, technology, and advanced computing chips have been added to the Commerce Department Control List, which requires exporters of these technologies to hold a special license.
- All licenses have a presumption of denial except for foreign semiconductor companies operating in China, like SK Hynix and Samsung, who received a one-year exemption that Korean trade minister [Lee Chang-yang has indicated will likely be extended](#). In the case of South Korea, the intention of this was to balance national security interests and South Korea’s economic interests.
- Perhaps most significantly, the Commerce Department restricted U.S. persons from supporting the development, production, or use of integrated circuits at certain Chinese foundries without a license.
- The [Fiscal Year 2023 National Defense Authorization Act](#) prevents the U.S. government from purchasing and using semiconductors made by SMIC, CXMT, and YMTC for the next five years, all of which have known links to Chinese state security and intelligence apparatuses.

THE ROLES OF ALIGNED STAKEHOLDER NATIONS:

1. The European Union: Semiconductor Manufacturing Equipment

- The European Union is planning to institute export controls on manufacturing equipment for advanced chips, following a [decision by the Netherlands](#) to restrict some of its supplies. The Netherlands’ ASML is a key supplier of advanced semiconductor manufacturing equipment globally that is critical to China’s emerging domestic semiconductor industry. A successful U.S.-led export control regime to limit China’s capacity to produce high-end chips cannot be successful if the E.U. is not aligned.

2. The Quad: Four Nations on the Cutting Edge of Semiconductor Technology

- Quad partners India, Australia, Japan and the U.S. have [created a joint initiative](#) to map capacity, identify vulnerabilities, and bolster security up and down the semiconductor supply chain. This initiative is intended to help these four critical nations support a diverse and competitive global semiconductor market.

3. The G7: Collectively Cracking Down on Chinese Economic Coercion

- At the May 2023 summit in Hiroshima, Japan, the G7 [announced](#) the creation of a Coordination Platform on Economic Coercion, targeting China’s economic

coercion stating: “We affirm our shared responsibility and determination to coordinate on preventing the cutting-edge technologies we develop from being used to further military capabilities that threaten international peace and security.”

4. Japan: Long-Time Tech Leadership

- Earlier this year, Japan [announced](#) that it will tighten export controls on 23 materials used for semiconductor manufacturing, a clear shot to China’s domestic semiconductor industry.
- Around the G7 meeting in Hiroshima, Japan and the United States [announced](#) an international partnership of 11 U.S. and Japanese universities to collaborate on advanced semiconductor research and development.

5. South Korea: Advanced Semiconductor Technology Leadership

- On May 21, 2022, the U.S. Commerce Secretary and the Republic of Korea Minister of Trade, Industry, and Energy signed a [Memorandum of Understanding](#) to launch the United States-Korea Supply Chain and Commercial Dialogue. As part of the dialogue, the U.S. and South Korea agreed to closely cooperate on advanced semiconductors and to implement necessary measures that protect national security, while minimizing disruptions to global semiconductor supply chains.

6. India: Major Potential in an Important Market

- India and the U.S. have [signed a memorandum of understanding on cooperation](#) aimed at helping India play a greater role in the global semiconductor supply chain.

CHINA’S RESPONSE

- China initiated a [dispute at the World Trade Organization](#) over the U.S. semiconductor export controls, claiming that the U.S. government was engaged in an effort to cut them off from key technologies critical to its future economic success.
- China also recently [banned U.S. chipmaker Micron](#) from selling its memory chips to key infrastructure projects, which will likely lead to a broader soft ban across China’s economy. Micron is the only U.S. chipmaker that does not manufacture in China.

IMPLICATIONS AND THE WAY FORWARD

- To protect semiconductor supply chains critical to U.S. national and economic security, the United States and democratic allies must remain vigilant against domestic and international political pressure to backtrack on the key semiconductor export controls currently in place. Broad waivers should not be issued and time-specific waivers already in place, including the one that allows South Korean chipmakers to manufacture in China, should not be extended.

- Current U.S. and allied export controls only cover cutting-edge chips, not so-called legacy chips needed for cars, laptops, and other consumer products. Efforts by Chinese firms to become global leaders in production of these chips threaten to create significant economic leverage over the U.S. and its allies. The United States should [revise](#) the current 16-nanometer standard in the emerging export control regime upward to 40 nanometers.
- China's Micron ban is a clear act of economic coercion that highlights the need for the G7-led effort to push back on the CCP's intentional efforts to use its economic prowess to exact pressure and adherence to its demands. The G7, led by key personnel at the United States National Security Council, should rapidly advance and operationalize the Coordination Platform on Economic Coercion to collectively respond.
- Any Chinese domestic semiconductor company with close ties to the Chinese military and intelligence services, including China's domestic champion for memory chips, CXMT, should be added to the U.S. Entity List.
- Given advancements in memory chips and the reliance upon them by the U.S. military and intelligence services, memory should be thought of not simply as a global commodity, but as a national security one whose production is worth protecting in the same way the Pentagon prioritizes acquisition of logic chips. The Department of Defense's Trusted Foundry program should be extended to include memory chips.
- The Fiscal Year 2024 National Defense Authorization Act currently under consideration in Congress should include language to provide a framework for preference for U.S. and allied-made semiconductors through the Federal Acquisition Security Council in the federal procurement process.
- To be effective, semiconductor and SME export controls need to be multilateral. U.S.-led pressure needs to be exerted on the European Union, Japan, South Korea, Taiwan, and others to adopt equivalent export control measures.

This paper is a product of the Forum for American Leadership's [Technology and National Security Innovation](#) Working Group. The primary author of the paper was Andy Keiser.

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